

Containment and Overflow in the Sleeping Ego: Relationship Between Ego Functions and Nightmares

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ABSTRACT - Nightmares may signal failures in emotional and self-regulation. Drawing on ego-psychological theory, this study tested whether specific ego functions predict nightmare frequency beyond neuroticism. University students ($N = 269$) completed the Nightmare Experience Scale, Ego Functions Assessment, and Mini-IPIP Neuroticism Scale. Hierarchical regression showed ego functioning accounted for additional variance in nightmare frequency beyond gender and neuroticism. Weaker ego defensive functioning and low sensory thresholds predicted more nightmares, while higher drive regulation and cognitive control of autonomous functions also increased vulnerability. Results suggest nightmares arise when the ego's balance between affective containment and expression is disrupted, reflecting both fragility and overcontrol. The results were discussed as bridging psychoanalytic theory and contemporary research. Limitations and suggestions for future research were posited.

Keywords:
Nightmares; Ego strength; Ego functions; Emotional regulation; Defensive functioning; Dream distress; Personality integration

Introduction

Nightmares, though often dismissed as nocturnal disturbances, are increasingly recognized as a clinically meaningful and transdiagnostic phenomenon (Giesermann et al., 2019). They occur across a range of psychiatric conditions, including posttraumatic stress disorder, generalized anxiety, depression, and personality disorders (Swart et al., 2013). However, their presence is not limited to clinical populations. In nonclinical samples, nightmares have been consistently linked with elevated neuroticism, schizotypal features, and emotional instability (Levin & Nielsen, 2007). These findings suggest that nightmares represent a general indicator of emotional

dysregulation and psychological vulnerability: an affective signal that reflects the individual's capacity, or failure, to integrate distressing experiences.

This conceptualization aligns with psychoanalytic and ego-psychological theory in which the ego serves as the central regulatory structure of personality. Freud (1923) described the ego as a mediating system that negotiates between instinctual drives (the id), internalized moral standards (the superego), and the demands of external reality. Later theorists expanded upon this structural model, emphasizing the ego's autonomous and adaptive functions (Hartmann, 1964). These functions enable reality testing, affect regulation, impulse control, and the integration of internal experiences into a coherent sense of self (Cabaniss et al., 2016; McWilliams, 2011). The adequacy with which these functions operate is expressed as ego strength, the individual's capacity to tolerate conflict, manage anxiety, and maintain psychological equilibrium under stress (Barron, 1953; Bellak, 1989).

Empirical evidence supports the clinical significance of ego strength. Barron's (1953) original Ego Strength Scale, derived from the Minnesota Multiphasic Personality Inventory, predicted successful psychotherapy outcomes and lower levels of psychopathology. Individuals high in ego strength display adaptive coping, reality-based thinking, and effective emotional regulation (Cabaniss et al., 2016). Conversely, diminished ego strength has been associated with neurotic and dissociative symptomatology, poor stress tolerance, and a general erosion of psychological integration (Besharat, 2017; Ziadni et al., 2017).

This framework provides a valuable lens for understanding nightmares. Dreaming, by its nature, occurs in a state of reduced ego control. When ego functions are robust, dream content may serve adaptive functions such as emotional integration and problem solving (Levin & Nielsen, 2007). However, when ego strength is compromised, unconscious material may overwhelm the ego's regulatory capacities, giving rise to distressing or repetitive nightmares. Several early studies found that nightmare sufferers scored lower on measures of ego strength (Cernovsky, 1986; Hersen, 1971; Levin, 1989), suggesting that ego functioning contributes to how individuals process affect-laden dream imagery. Further, Yu (2011) found that nightmares were related to a particular pattern of utilizing fewer useful, mature defense mechanisms, which are generally considered part of a stronger ego, and more immature defenses which are associated with a weaker ego (Cabaniss et al., 2016).

More recent evidence reinforces this association. In a series of studies, Kelly (2020) demonstrated that ego strength predicted both the frequency and distress of nightmares above and beyond trait neuroticism and current psychological distress. This finding indicates that ego functioning might predict unique variance in nightmares not explained by general emotional instability. Specifically, individuals with lower ego strength may be less able to regulate anxiety and conflict during dreaming, resulting in heightened negative affect and impaired sleep quality.

While this research established ego strength as a broad predictor of nightmare experiences, the construct itself encompasses a constellation of distinct ego functions (Bellak et al., 1973). An overview of hypothetical ego functions and their descriptions are presented in Table 1. In general, these functions represent basic cognitive and perceptual functioning, regulation of the self, and protection of self-esteem. Each represents a discrete domain of psychological adaptation, and each may contribute differently to the occurrence and intensity of nightmares. Several of these

functions have been identified by previous nightmare researchers approaching the topic from different perspectives and using different terminology. For example, impaired defensive functioning could allow threatening or shame-laden content to intrude into consciousness, producing distressing dream imagery (Levin & Nielsen, 2007). A weak stimulus barrier, reflecting low tolerance for sensory and emotional stimulation, may heighten vulnerability to nightmare experiences (Carr & Nielsen, 2017). Conversely, higher levels of mastery-competence may buffer against nightmare distress by enhancing perceived control and self-efficacy (Rousseau & Belleville, 2018).

Table 1: Descriptions of hypothesized ego functions

Ego function/ EFA Scale	Description
Object relations	Capacity for mature and reciprocal relationships
Reality testing	Being able to distinguish internal and external stimuli
Judgment	Anticipating consequences of actions
Sense of reality-of-self/world	Feeling unique and grounded in the external and social world
Regulation drives/impulses	Tolerance of frustration and ability to delay impulses
Thought processes	Ability to apply rational thinking
Regression in service of the ego	Capacity for creativity and symbolic flexibility
Defensive functioning	adaptive use of defense mechanisms
Stimulus barrier	Tolerance for internal and sensory stimulation
Autonomous functioning	ability to maintain purpose and cognition under stress
Synthetic-integrative functioning	Ability to organize and integrate diverse aspects of the self
Mastery-competence	Sense of efficacy and control in the environment

Note: Descriptions drawn from Bellak (1989) and Bellak et al. (1973).

Notably, not all ego functions are expected to relate to nightmares in the same direction. Some functions, such as impulse regulation or autonomous functioning, may be “overcontrolled” in waking life, leading to the rebound of suppressed material in dreams (Malinowski, 2017), a process sometimes described as ego rigidity. This paradox, where excessive waking control corresponds to greater nocturnal distress, indicates a need to examine ego functions individually rather than as a global strength indicator.

Building on this theoretical and empirical foundation, the purpose of the present study was to identify which specific ego functions are most closely associated with nightmares. By examining ego functioning at a more granular level, the study aims to clarify how self-regulatory processes shape the boundary between waking and dreaming life. It also seeks to extend personality-based models of nightmares, which have primarily focused on neuroticism (Schredl & Göritz, 2020; Schredl & Reinhard, 2011), by incorporating a structural model of personality functioning.

Based on the review above, several hypotheses were formed that integrate psychoanalytic theory with contemporary empirical findings, framing nightmares as indicators of ego functioning

and self-regulatory balance. First, consistent with the notion that ego capacity reflects adaptive self-regulation beyond trait emotionality, it was hypothesized that ego functioning will account for unique variance in nightmare frequency in addition to gender and neuroticism (H1). Further, reflecting lower tolerance for internal and sensory stimulation, among specific ego functions it was expected that weaker defensive functioning and a thinner stimulus barrier will be associated with more nightmares (H2). Finally, considering that excessive waking mental control may lead to compensatory release of affective material during sleep, it was expected that overcontrolled ego functions, such as heightened impulse regulation or autonomous functioning, would be associated with more nightmares (H3).

Method

Participants

Participants were 269 undergraduate students (215 women, 54 men) enrolled at a mid-sized public university in the Western United States. Ages ranged from 18 to 36 years ($M = 19.74$, $SD = 3.45$). Participants were recruited through an introductory psychology participants pool. The majority identified as Latinx ($n = 190$; 70.6%) with the remainder identifying as White/Caucasian ($n = 32$; 11.9%), Asian ($n = 27$; 10%), African American ($n = 13$; 4.8%), or other/mixed ethnicity ($n = 7$; 2.7%).

Measures

Nightmares. Nightmares were measured using the Nightmare Experience Scale (NExS; Kelly & Mathe, 2019), a 4-item self-report instrument assessing the frequency of distressing nightmares, e.g., “I have nightmares several nights a month.” Items are rated on a 5-point scale from 0 (*Strongly disagree*) to 4 (*Strongly agree*), with higher scores indicating more frequent distressing nightmares. The NExS demonstrates good internal consistency ($\alpha = .85$), retest reliability (.86; two weeks), and convergent validity with other self-report nightmare measures (Kelly & Mathe, 2019).

Ego Functions. Ego functioning was assessed using the Ego Functions Assessment (EFA; Bellak, 1989), a 120-item self-report inventory designed to measure 12 theoretically derived ego functions (Bellak et al., 1973), e.g., “Are you able to carry out your plans?” (Regulation). Ego functions assessed by the EFA use the same names and descriptions as the ego functions presented in Table 1. Each function is represented by 10 items. The item, “Do you have nightmares?” from the defensive functioning scale was not included in its total score so as not to confound correlations with the NExS. For this study, the original yes/no response format was changed to a 5-point ranging from 1 (*Never*) to 5 (*Very often*). Responses were summed to produce a total score for each scale. For all scales except regression in service of the ego, Synthetic-integrative functioning, and mastery-competence, higher scores indicate poorer functioning in those areas. Previous findings indicate acceptable internal consistency and factorial validity in both clinical and nonclinical samples (e.g., Juni, 2002; Basu et al., 2005), supporting its use as a measure of structural ego functioning. Coefficient alphas and two-week retest reliabilities have been reported between .62–.79 (Juni et al., 2000).

Neuroticism. The 4-item Mini-IPIP Neuroticism Scale (Donnellan et al., 2006) was used to assess trait neuroticism, e.g., “I get upset easily.” Participants respond using a 5-point scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Higher scores indicate more neuroticism. The Mini-IPIP Neuroticism Scale has demonstrated adequate reliability ($\alpha = .70$) and convergent validity with longer Big Five measures (Donnellan et al., 2006).

Procedure

Participants were provided with nominal course credit in exchange for participation. All procedures were reviewed and approved by the Institutional Review Board of California State University, Bakersfield (Protocol #21-147). Informed consent was obtained electronically before participation. Participants completed the survey anonymously via Qualtrics, which took approximately 20 minutes to complete. Instructions emphasized honesty and confidentiality, noting that there were no right or wrong answers. Upon completion, participants were debriefed and provided with contact information for campus counseling services in case any distress was elicited by the questionnaire. No exclusionary criteria were used.

Data Analysis

Analyses were conducted using IBM SPSS Statistics (Version 30). Preliminary analyses examined descriptive statistics, internal consistency reliabilities, and zero-order (Pearson) correlations among study variables. To test the primary hypotheses, hierarchical multiple regression analyses were conducted with total NExS scores as the criterion. Based on previous findings (Kelly, 2016; Schredl, 2003; Schredl & Reinhard, 2011), gender and neuroticism were entered as control variables on Step 1. On Step 2 the twelve EFA ego function subscale scores were entered simultaneously to evaluate incremental variance accounted for and determine which subscales were most associated with NExS scores. Statistical significance was evaluated at $p < .05$ (two-tailed).

Results

Descriptive statistics of variables are presented in Table 2. All variables had adequate internal consistency reliability. Further analyses indicated that none of the variables showed problematic skewness or kurtosis, i.e., values were ≤ 1.93 (George & Mallery, 2019).

There was no significant gender difference for NExS scores. However, women scored significantly higher on neuroticism, $t(267) = 2.20, p = .014$. Men scored higher on reality testing, $t(267) = 2.79, p = .003$, and judgement, $t(267) = 3.19, p < .001$. Older participants scored lower on sense of reality of world and self, $r = -.18, p = .004$, and higher on synthetic-integrative functioning, $r = .18, p = .005$, and mastery/competence, $r = .14, p = .026$. No significant age effects were observed.

Zero-order correlations of variables with NExS scores are presented in Table 2. NExS scores were positively correlated with neuroticism ($r = .26, p < .001$) and several ego function variables, including poorer object relations, reality testing, decreased defensive functioning, stimulus barrier, regulation of drives and impulses, and autonomous functioning.

Prior to interpreting regressions, multicollinearity was examined and found not to be a problem, e.g., VIF's ≤ 4.2 (Kim, 2019). Regression results are presented in Table 3. On Step 1, gender and neuroticism together accounted for a significant 6.7% of the variance in NExS scores.

Table 2: Descriptive statistics and correlations with NExS scores

Scale	NExS r	M	SD	α
NExS		5.45	4.00	.795
Neuroticism	.26**	11.69	3.99	.838
Object relations	.19**	23.18	6.33	.774
Reality testing	.17**	17.96	5.61	.798
Judgement	.08	21.88	5.65	.780
Sense of reality-self/world	.15*	18.51	6.39	.830
Regulation drives/impulses	.03	23.43	5.75	.745
Thought processes	.14*	26.11	7.87	.872
Regression in service of the ego	-.01	31.20	5.60	.713
Defensive functioning	.26**	24.60	6.71	.836
Stimulus barrier	.26**	26.16	7.30	.815
Autonomous functioning	.08	29.92	6.53	.815
Synthetic-integrative functioning	.05	33.60	5.70	.796
Mastery-competence	-.04	33.00	6.66	.852

$N = 269$. * $p < .05$ ** $p < .01$. NExS = Nightmare Experience Scale

Neuroticism emerged as a significant predictor ($\beta = .26$, $p < .001$), whereas gender did not contribute ($\beta = .01$, $p = .873$). On Step 2, the addition of the twelve ego function subscales accounted for an additional significant 11.3% of the variance, bringing the total explained variance to 18.0%. Among the twelve ego functions, four emerged as significant unique predictors when controlling gender, neuroticism, and each other. Regulation and control of drives, affects, and impulses ($\beta = -.31$, $p < .001$) were significant, indicating that individuals reporting more waking control over impulses and emotions also reported more nightmares. Further, autonomous functioning ($\beta = -.33$, $p < .001$) was significant, suggesting that those who maintain strong intentionality and goal direction under stress experience more nightmares. Defensive functioning ($\beta = .27$, $p = .021$) also was significant, showing that weaker use of adaptive defenses was associated with greater nightmare frequency. Finally, stimulus barrier ($\beta = .24$, $p = .006$) was significant, indicating that lower thresholds for internal and sensory stimulation predicted more

nightmares. No other ego functions were significant independent predictors once shared variance was controlled. Of note, however, neuroticism ($\beta = .23$, $p = .021$) remained significant outside of ego functions denoting some separates of negative emotional experiences and ego functions.

Table 3: Regression results predicting NExS scores

	Step 1			Step 2		
Variable	β	t	p	β	t	p
Gender	.01	0.16	.873	-.03	0.40	.687
Neuroticism	.26	4.31	<.001	.23	2.32	.021
Object relations				.09	1.11	.268
Reality testing				.04	0.49	.625
Judgement				-.05	0.58	.563
Sense of reality of self/world				.03	0.37	.710
Regulation drive/impulses				-.31	3.73	<.001
Thought processes				.05	0.50	.621
Regression in service of the ego				.03	0.42	.678
Defensive functioning				.27	2.33	.021
Stimulus barrier				.24	2.80	.006
Autonomous functioning				-.33	3.21	.001
Synthetic-integrative function				.01	0.07	.944
Mastery-competence				.08	0.88	.383
$\Delta R^2 = .067, F = 9.55, p < .001$				$\Delta R^2 = .113, F = 2.92, p < .001$		

Note: NExS = Nightmare Experience Scale. Gender coded as 1 = male, 2 = female.

Discussion

The present study examined which specific ego functions best predict nightmare frequency and distress after accounting for gender and neuroticism. As in prior research, neuroticism was positively associated with nightmares, replicating this link (Schredl & Göritz, 2020; Schredl & Reinhard, 2011). However, beyond this dispositional tendency, ego functioning accounted for significant additional variance, supporting the idea that the structure of the ego with its flexibility, defensive balance, and capacity for affect regulation plays a role in individuals' experience of nightmares. These findings are consistent with previous research indicating relationships between ego strength and nightmares outside of neuroticism (Kelly, 2020).

Four ego functions emerged as unique predictors: defensive functioning, stimulus barrier, regulation of drives and impulses, and autonomous functioning. This pattern reflects a dual

dynamic in which nightmares relate to both structural vulnerabilities (weak defenses, low sensory thresholds) and possible functional overcontrol (excessive regulation and autonomy).

Individuals with weaker defensive functioning reported more nightmares. This suggests that limited or maladaptive defense use leaves individuals more exposed to unmodulated affective material. In psychoanalytic terms, nightmares may signify a breakdown of the ego's containment functions; moments when affect overwhelms the usual defensive barriers (Caplan, 1961; Freud, 1920; McWilliams, 2011). Neurocognitive models offer similar interpretations; that is, when emotion-regulatory networks fail to downregulate threat memory activation during REM sleep, negative affect can emerge vividly in dream imagery (Levin & Nielsen, 2009; Nielsen & Levin, 2007).

Similarly, a thinner stimulus barrier predicted higher nightmare frequency, indicating heightened reactivity to internal and external stimulation. This concept is similar to recent findings linking sensory processing sensitivity to increased emotional intensity and arousal during sleep (Carr & Nielsen, 2017; Giesemann et al., 2019). Individuals with low sensory thresholds may enter REM states with higher limbic activation, increasing susceptibility to nightmare imagery.

In contrast, stronger regulation of drives and impulses and autonomous functioning, functions typically considered adaptive, were also associated with more nightmares. These findings suggest that excessive control and rigid autonomy may paradoxically inhibit emotional expression during waking life, fostering compensatory affective rebound during dreaming (Malinowski, 2017). Overcontrolled ego functioning may therefore restrict the ego's capacity to integrate affective material consciously, leading to its emergence symbolically during sleep (Freud, 1900, 1923). This interpretation aligns with the emotion-regulation function of dreaming, which posits that dreams serve to process and integrate unresolved emotional experiences (Hartmann, 2011; Walker & van der Helm, 2009). When waking regulation is overly constrictive, the dream system may "overflow," producing nightmares as attempts at unprocessed affect integration (Scarpelli et al., 2019). However, it should be acknowledged that the over control aspects of the ego functioning scale may have partly been influenced by self-report bias toward idealized control rather than actual control. Additional research is needed to examine this possibility.

Together, these findings indicate that nightmares reflect not only quantitative deficits in ego strength but qualitative imbalances in the ego's regulatory style. Too little containment permits flooding by affect, while too much control impedes necessary emotional processing. Both patterns result in dysregulated dreaming. This could be construed as a manifestation of what Barron (1953) described as insufficient ego flexibility. This balance between expression and inhibition, mirrored in both waking functioning and REM emotional processing, is similar to contemporary models of emotional adaptability as a core feature of mental health (Cabaniss et al., 2016; Ziadni et al., 2017).

From a theoretical perspective, these results integrate psychodynamic and neurocognitive approaches to dreaming. Ego-psychological constructs such as defense, impulse control, and stimulus filtering can be seen as parallel to neurobiological processes that govern arousal modulation, amygdala reactivity, and prefrontal regulation during REM sleep (Levin & Nielsen,

2009; Walker & van der Helm, 2009). The convergence of these frameworks suggests that the ego's structural organization is reflected in the dream process itself, a sort of bridge between subjective experience and emotional brain function.

Clinically, these findings support the view that nightmares may signal broader ego-regulatory imbalances rather than isolated sleep phenomena. Interventions that enhance ego flexibility (the capacity to tolerate affect without overcontrol) may therefore reduce nightmare occurrences and associated distress. Approaches such as imagery rehearsal therapy, psychodynamic psychotherapy, and mindfulness-based techniques all aim to foster adaptive regulation and emotional integration (Cabaniss et al., 2016; Gieselmann et al., 2019; Rousseau & Belleville, 2018). Moreover, recognizing nightmares as possible expressions of unassimilated emotional content can help clinicians frame them as opportunities for integration rather than purely as symptoms to suppress (Hartmann, 2011).

This study has numerous limitations which caution generalization of its findings and offer opportunities for future research. First, the use of a nonclinical, student sample which included mostly women from Latinx backgrounds limits generalizability. Secondly, the use of self-report measures of ego functioning may not capture the full complexity of unconscious processes. Similarly, some researchers suggest that retrospective self-reports of nightmares may not be accurate representations of the phenomenon (Robert & Zadra, 2008).

Future work might integrate clinician-rated or performance-based assessments of ego functions, physiological measures of REM activity, and diary-based reports of nightmares or dream content to triangulate these findings. Longitudinal studies may also help clarify the directionality between ego development and nightmare frequency. It is both possible that stronger ego functions mitigate nightmares and that persistent nightmares erode ego integrity over time. Another possible research angle is examination of how recently identified constructs, such as nightmare proneness (Kelly, 2018) relate to ego functioning.

Despite the above limitations, the present findings contribute to an evolving synthesis between psychoanalytic and affective-neuroscientific models. Indeed, these findings and their alignment with recent research are consistent with observations of similarities between contemporary constructs and long-established psychoanalytic concepts (Bornstein, 2006). In whatever case, the current findings suggest nightmares are not merely by-products of emotional instability but also reflections of how the ego organizes, represses, and releases affective experience across states of consciousness.

In sum, the present study extends previous findings of relationships between nightmares and ego strength by demonstrating which specific ego functions might be most associated with nightmares. Nightmares seem to arise when the ego's balance between containment and expression falters. This may be through a combination of weak defenses and excessive control. This pattern underscores the importance of ego flexibility as a possible determinant of mental health and emotional processing. By situating nightmares within the broader array of ego functioning, these findings bridges classical psychoanalytic theory and contemporary neurocognitive perspectives, indicative of the ego's lifelong task of adapting, integrating, and making meaning from emotional experience.

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References

- Barron, F. (1953). An ego-strength scale which predicts response to psychotherapy. *Journal of Consulting Psychology, 17*(5), 327–333. <https://doi.org/10.1037/h0061962>
- Basu, J., Basu, S., & Basu, S. (2005). Confirmatory factor analysis of the Ego Functions Assessment Scale: Reports on two normal samples. *Indian Journal of Clinical Psychology, 32*(1), 34–40.
- Bellak, L. (1989). *Ego functions assessment (EFA): Manual*. C.P S., Inc.
- Bellak, L., Hurvich, M., & Gediman, H. (1973). *Ego functions in schizophrenics, neurotics, and normals*. New York, NY: International Universities Press.
- Bellak, L., & Sheehy, M. (1976). The broad role of ego functions assessment. *American Journal of Psychiatry, 133*(11), 1259–1264. <https://doi.org/10.1176/ajp.133.11.1259>
- Besharat M. (2017). Development and validation of ego strength scale: A preliminary study. *Journal of Psychological Science, 15*(60), 445–467. <http://psychologicalscience.ir/article-1-163-en.html>
- Bornstein, R. F. (2006). A Freudian construct lost and reclaimed: The psychodynamics of personality pathology. *Psychoanalytic Psychology, 23*(2), 339–353. <https://doi.org/10.1037/0736-9735.23.2.339>
- Cabaniss, D. L., Cherry, S., Douglas, C. J., & Schwartz, A. R. (2016). *Psychodynamic psychotherapy: A clinical manual* (2nd ed.). Wiley-Blackwell.
- Caplan, G. (1961). *An approach to community mental health*. Grune and Stratton.
- Carr, M., & Nielsen, T. (2017). A novel differential susceptibility framework for the study of nightmares: Evidence for trait sensory processing sensitivity. *Clinical Psychology Review, 58*, 86–96. <https://doi.org/10.1177/2167702617702198>
- Cernovsky, Z. Z. (1986). MMPI and nightmare reports in women addicted to alcohol and other drugs. *Perceptual and Motor Skills, 62*(3), 717–718. <https://doi.org/10.2466/pms.1986.62.3.717>
- Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The Mini-IPIP scales: Tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment, 18*(2), 192–203. <https://doi.org/10.1037/1040-3590.18.2.192>
- Freud, S. (1920). *Beyond the pleasure principle*. London, UK: Hogarth Press.
- Freud, S. (1923). *The ego and the id*. London, UK: Hogarth Press.
- George, D., & Mallery, P. (2019). *IBM SPSS Statistics 26 Step by Step: A Simple Guide and Reference*. Routledge
- Gieselmann, A., Ait Aoudia, M., Carr, M., Germain, A., Gorzka, R., Holzinger, B., Kleim, B., Krakow, B., Kunze, A. E., Lancee, J., Nadorff, M. R., Nielsen, T., Riemann, D., Sandahl, H.,

- Schlarb, A. A., Schmid, C., Schredl, M., Spoormaker, V. I., Steil, R., & Pietrowsky, R. (2019). Aetiology and treatment of nightmare disorder: State of the art and future perspectives. *Journal of Sleep Research*, 28(4), e12820. <https://doi.org/10.1111/jsr.12820>
- Hartmann, E. (2011). *The nature and functions of dreaming*. Oxford Academic.
- Hartmann, H. (1964). *Essays on ego psychology: Selected problems in psychoanalytic theory*. International Universities Press.
- Hersen, M. (1971). Personality characteristics of nightmare sufferers. *Journal of Nervous and Mental Disease*, 153(1), 27–31. <http://dx.doi.org/10.1097/00005053-197107000-00003>
- Juni, S. (2002). Ego function assessment of nonclinical individuals. *Psychological Reports*, 91(2), 679–688. <https://doi.org/10.2466/pro.2002.91.2.679>
- Juni, S., Stack, J. E., & Burton, J. M. (2000). Ego function assessment of substance abusers: standardization and reliability. *Psychological Reports*, 87 (3 Pt 2), 1185–1195. <https://doi.org/10.2466/pro.2000.87.3f.1185>
- Kelly, W. E. (2016). Some personality characteristics of college students reporting frequent nightmares. *Sleep and Hypnosis*, 18(3), 69–73. <https://doi.org/10.5350/SLEEP.HYPN.2016.18.0110>
- Kelly, W. E. (2018). The Nightmare Proneness Scale: A proposed measure for the tendency to experience nightmares. *Sleep and Hypnosis*, 20(2), 120–127. <https://doi.org/10.5350/Sleep.Hypn.2017.19.0143>
- Kelly, W. E. (2020). Ego strength predicts nightmare frequency and distress beyond neuroticism and psychological distress. *Dreaming*, 30(1), 29–44. <https://doi.org/10.1037/drm0000118>
- Kelly, W. E., & Mathe, J. E. (2019). The Nightmare Experience Scale (NExS): Development and validation. *Dreaming*, 29(4), 331–345. <https://doi.org/10.1037/drm0000127>
- Kim, J. H. (2019). Multicollinearity and misleading statistical results. *Korean Journal of Anesthesiology*, 72(6), 558–569. <https://doi.org/10.4097/kja.19087>
- Levin, R. (1989). Relations among nightmare frequency and ego strength, death anxiety, and sex of college students. *Perceptual and Motor Skills*, 69(3 Pt 2), 1107–1113. <https://doi.org/10.1177/00315125890693-208>
- Levin, R., & Nielsen, T. (2007). Disturbed dreaming, posttraumatic stress disorder, and affect distress: A review and neurocognitive model. *Psychological Bulletin*, 133(3), 482–528. <https://doi.org/10.1037/0033-2909.133.3.482>
- Levin, R., & Nielsen, T. A. (2009). Nightmares, bad dreams, and emotion dysregulation: A review and new neurocognitive model of dreaming. *Current Directions in Psychological Science*, 18(2), 84–88. <https://doi.org/10.1111/j.1467-8721.2009.01614.x>
- Malinowski, J. (2017). High thought suppressors dream more of their negative waking-life experiences than low thought suppressors. *Dreaming*, 27(4), 269–277. <https://doi.org/10.1037/drm0000061>
- McWilliams, N. (2011). *Psychoanalytic diagnosis: Understanding personality structure in the clinical process* (2nd ed.). New York, NY: Guilford Press.
- Nielsen, T., & Levin, R. (2007). Nightmares: A new neurocognitive model. *Sleep Medicine Reviews*, 11(4), 295–310. <https://doi.org/10.1016/j.smrv.2007.03.004>

- Robert, G., & Zadra, A. (2008). Measuring nightmare and bad dream frequency: Impact of retrospective and prospective instruments. *Journal of Sleep Research*, 17(2), 132–139. <https://doi.org/10.1111/j.1365-2869.2008.00649.x>
- Rousseau, A., & Belleville, G. (2018). The mechanisms of action underlying the efficacy of psychological interventions for nightmares: A systematic review. *Sleep Medicine Reviews*, 38, 29–38. <https://doi.org/10.1016/j.smrv.2017.03.002>
- Scarpelli, S., Bartolacci, C., D'Atri, A., Gorgoni, M., & De Gennaro, L. (2019). The functional role of dreaming in emotional processes. *Frontiers in Psychology*, 10, Article 459. <https://doi.org/10.3389/fpsyg.2019.00459>
- Schredl M. (2003). Effects of state and trait factors on nightmare frequency. *European Archives of Psychiatry and Clinical Neuroscience*, 253(5), 241–247. <https://doi.org/10.1007/s00406-003-0438-1>
- Schredl, M., & Goeritz, A. S. (2019). Nightmare frequency and nightmare distress: Socio-demographic and personality factors. *Sleep Science*, 12(3), 178–184. <https://doi.org/10.5935/1984-0063.20190080>
- Schredl, M., & Reinhard, I. (2011). Gender differences in nightmare frequency: A meta-analysis. *Sleep Medicine Reviews*, 12(9), 980–986. <https://doi.org/10.1016/j.sleep.2011.06.009>
- Swart, M. L., van Schagen, A. M., Lancee, J., & van den Bout, J. (2013). Prevalence of nightmare disorder in psychiatric outpatients. *Psychotherapy and Psychosomatics*, 82(4), 267–268. <https://doi.org/10.1159/000345948>
- Walker, M. P., & van der Helm, E. (2009). Overnight therapy? The role of sleep in emotional brain processing. *Psychological Bulletin*, 135(5), 731–748. <https://doi.org/10.1037/a0016570>
- Yu, C. K.-C. (2011a). The mechanisms of defense and dreaming. *Dreaming*, 21(1), 51–69. <http://dx.doi.org/10.1037/a0022867>
- Ziadni, M. S., Jasinski, M. J., Labouvie-Vief, G., & Lumley, M. A. (2017). Alexithymia, defenses, and ego strength: Cross-sectional and longitudinal relationships with psychological well-being and depression. *Journal of Happiness Studies*, 18(6), 1799–1813. <https://doi.org/10.1007/s10902-016-9800-7>